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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,379	01/18/2002	Hiroshi Takekawa	3531.66126	6956

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EXAMINER

WONG, KIN C

ART UNIT PAPER NUMBER

2651

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/051,379

Applicant(s)

TAKEKAWA ET AL.

Examiner

K. Wong

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

The submitted formal drawings have being approved by the drafts person.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims (1-7) are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshikawa et al (6034834).

Regarding claim 1: Yoshikawa et al discloses a head actuator (element 2 in figure 8 of Yoshikawa et al) for a head provided so as to be accessible to a disk-shaped recording medium (element 101 in figure 8 of Yoshikawa et al) rotating above a base, the head actuator including:

a main actuator (element 2 - VCM in figure 8) driven so as to rotate above the base; and

a microactuator (element 8 in figure 8) driven so as to swing relative to the main actuator, the head being mounted on the microactuator (as depicted in figures 6 and 8);

the main actuator and the microactuator being controlled so that the head is moved in a substantially radial direction of the recording medium and positioned over a desired track of the recording medium (see col. 1, lines 49-55 of Yoshikawa et al);

a primary resonant frequency of mechanical characteristics of the main actuator being set to 100 Hz or higher (see col. 2, lines 32-40 of Yoshikawa et al). Thus, the limitations of the claim are considering satisfied because Yoshikawa et al discloses a setting of resonant of 100 Hz or more for compensating the resonant in the head actuator structure.

Regarding claim 2: Yoshikawa et al teaches that wherein the main actuator includes a ball bearing fixed to the base, the ball bearing having a property of a nonlinear spring, the primary resonant frequency being set according to the rigidity of the nonlinear spring (in col. 3, lines 45-59 of Yoshikawa et al).

Regarding claim 3: Yoshikawa et al teaches that wherein the rigidity of the nonlinear spring is increased by increasing a preload in the ball bearing (in col. 3, lines 49-57 of Yoshikawa et al).

Regarding claim 4: the limitations of wherein the rigidity of the nonlinear spring is increased by increasing a ball diameter in the ball bearing are considered inherent because Yoshikawa et al describes the similar noted functions in col. 4, lines 7-50, furthermore, it is inherently well that the larger ball surface area and a more rigidity is to be in the ball bearing system.

Regarding claim 5: the limitations of wherein the rigidity of the nonlinear spring is increased by increasing the viscosity of a grease used in the ball bearing are considered inherent because Yoshikawa et al describes the similar noted functions in col. 4, lines 52 to col. 5, line 28.

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Regarding claim 6: the limitations of an elastic member provided between the main actuator and the base, the primary resonant frequency being-set according to the modulus of elasticity of the elastic member are considered inherent because Yoshikawa et al describes a similar noted functions in col. 11, lines 8-18, where the caulking is inherently well known to have elastic properties.

Regarding claim 7: Yoshikawa et al teaches that wherein the primary resonant frequency is set to 150 Hz or higher (in col. 5, lines 29-46 of Yoshikawa et al).

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morris (5978752) and Huang et al (6100623) are cited for determining and compensating the resonant in the actuator structure.

4. Any inquiry concerning this communication should be directed to K. Wong whose telephone number is (703) 305-7772.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Hudspeth, can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is (703) 306-0377.

*kw*

11 Dec 02

*Regina Holder*  
**REGINA N. HOLDER**  
**PRIMARY EXAMINER**